


Exhibit 9

U.S. Patent No. 6,862,179 – Infringement Claim Chart

Claim 1	Exemplary Evidence of Infringement by Digital Realty
<p>[1pre] A method of cooling a plurality of racks in a data center, said method comprising:</p>	<p>Digital Realty's data centers use a method of cooling a plurality of racks in a data center.</p> <p>For example, Digital Realty uses Vertiv (Liebert) cooling units in the colocation data center. Liebert cooling units are controlled by Liebert's iCOM Intelligent Communication and Monitoring system.</p> <div>  <p>The graphic is a case study titled "Digital Realty uses Vertiv Cooling". It features the Vertiv logo and the text "CASE STUDY • DRIVING PLANET-SAVING INNOVATION". Below this is a blue bar with the Digital Realty logo. To the right, there is a text block titled "Partnering to prove the worth of pumped refrigerants" which describes how Vertiv developed their Liebert DSE system for data centers. At the bottom left, there is a URL: https://www.vertiv.com/4a10eb/globalassets/products/thermal-management/room-cooling/vertiv-and-digital-realty-case-study.pdf.</p> </div> <p>Digital Realty also uses Vigilent's dynamic cooling management which optimizes the airflow, and automatically finds and eliminates hot spots.</p>

Vigilent

Optimizing Mission Critical Cooling*

WHO WE SERVE

DIGITAL REALTY

“We found that upgrading fans and adding fan speed controls in our data centers allowed us to cool them more effectively and efficiently. In addition, the facility’s electrical energy usage was reduced, as was the average and peak electric power demand, resulting in a more energy efficient and sustainable data center environment.”

— Jim Smith, Chief Technology Officer, Digital Realty

<https://www.vigilent.com/digital-realty/>

DIGITAL REALTY DECREASES DATA CENTER COOLING ENERGY USAGE BY 66%

Energy Management Software and Variable Speed Fans Dramatically Reduce Carbon Emissions, PUE

San Francisco, CA – December 12, 2012 – Digital Realty Trust, Inc. (NYSE: DLR), Vigilent® Corporation, and Lawrence Berkeley National Laboratory today announced the results of a joint study focused on improving the energy efficiency of a data center designed, owned and operated by Digital Realty.

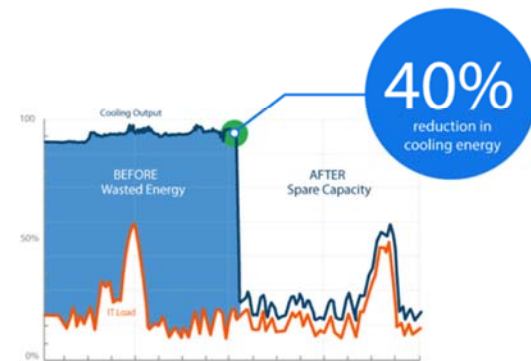
<https://www.vigilent.com/digital-realty-decreases-data-center-cooling-energy-usage-by-66/>

VIGILENT CONTINUOUSLY MATCHES COOLING OUTPUT TO HEAT LOAD

Optimized airflow eliminates hot spots.

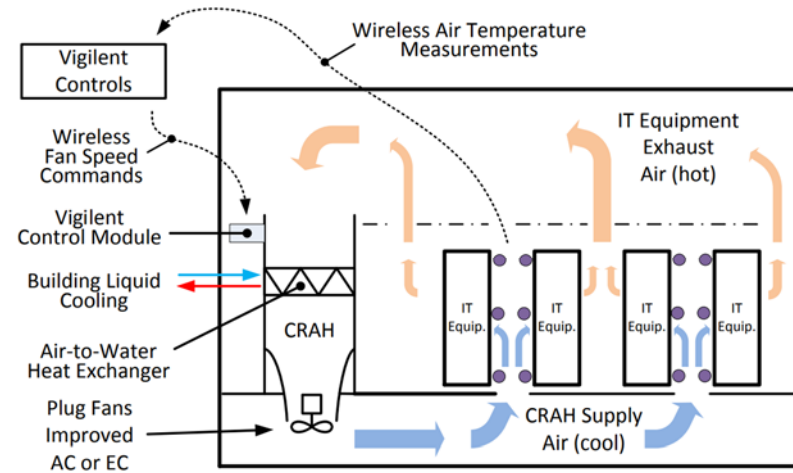
Vigilent continuously optimizes the airflow in your facility, delivering improved reliability and availability. The system automatically finds and eliminates hot spots, while its comprehensive reports and tools facilitate easier operations management.

Our system delivers the right amount of cooling exactly where it's needed. This typically results in up to a 40% reduction in carbon emissions and your cooling energy bill. We achieve that with sophisticated AI-based technology that learns your environment and adapts to change.



<https://www.vigilent.com/who-we-serve/by-facility/data-centers/>.

Closed Loop Wireless Control Diagram



Source: Lawrence Berkeley National Laboratory High-Tech and Industrial Systems Group

DIGITAL REALTY
Data Center Solutions

<https://www.vigilent.com/wp-content/uploads/2014/06/DigitalRealty.pdf>

Digital Realty also uses Schneider's cooling optimization to continuously optimize air flow in its colocation data centers.



Sustainable Data Centers Portland

Digital Realty
993 subscribers

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...

<https://youtu.be/PI6ygk-Jmk>, at 3:01.



<https://www.youtube.com/watch?v=yFMS-88wXn8>, at 0:32.

[1a] activating a cooling device and opening a controllable partition configured to vary a supply of cooling fluid within a zone of said data center, said zone including at least one associated rack of said plurality of racks;

Digital Realty activates a cooling device and opening a controllable partition configured to vary a supply of cooling fluid within a zone of said data center, said zone including at least one associated rack of said plurality of racks.

For example, Liebert's iCOM Intelligent Communication and Monitoring fluid economizer system activates the flow of chilled water/glycol, and varies cooling capacity by adjusting a motorized ball valve (controllable partition).

7.1.4 Temperature Control with a Fluid Economizer

When an economizer is installed, the cooling requirement (determined by the temperature proportional band) is addressed first by the economizer's secondary cooling, if the economizer cooling capacity is insufficient, the compressor(s) begin cooling to bring the room air temperature down to the temperature setpoint.

The fluid economizer employs a motorized ball valve that controls the flow of chilled water/glycol to provide a cooling capacity from 0% to 100%.

https://www.vertiv.com/49b8b2/globalassets/shared/liebert-icom-user-manual_sl-31075.pdf, p. 110.

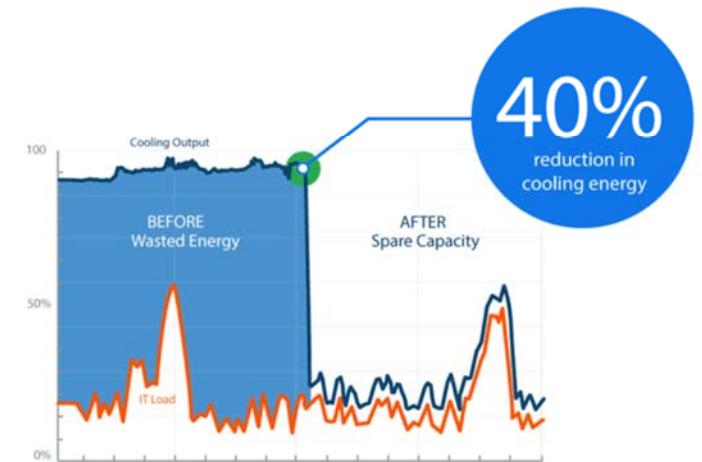
Digital Realty also uses Vigilent's optimized airflow system which utilizes artificial intelligence to remotely control air conditioners to provide the right amount of cooling exactly where and when it is needed.

VIGILENT CONTINUOUSLY MATCHES COOLING OUTPUT TO HEAT LOAD

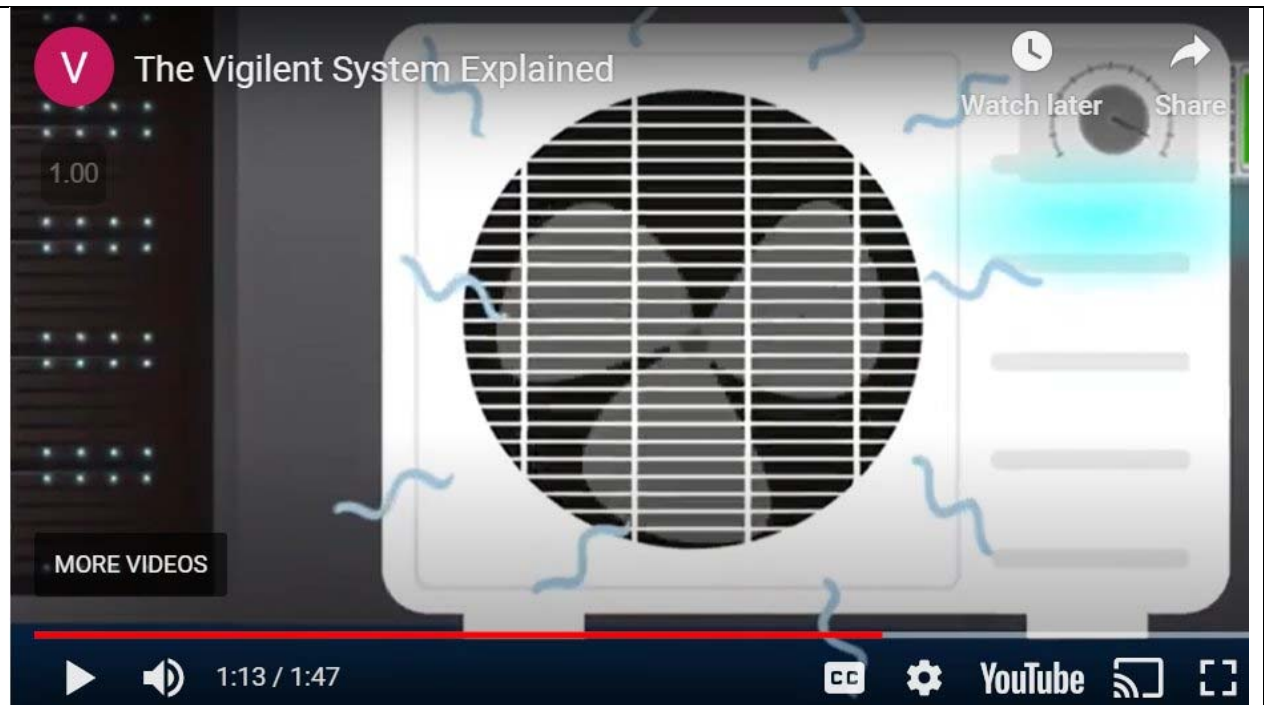
Optimized airflow eliminates hot spots.

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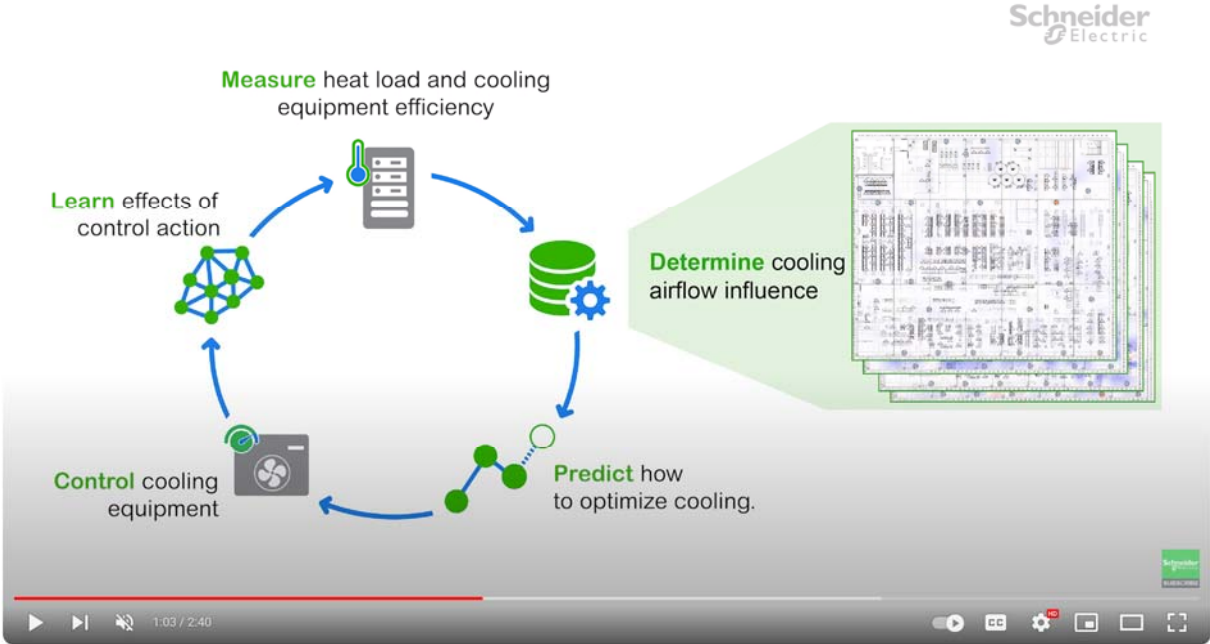


<https://www.vigilent.com/who-we-serve/by-facility/data-centers/>.



<https://www.vigilent.com/the-vigilent-system-explained/>, at 1:13.

Digital Realty also uses Schneider's Cooling Optimize which is a closed-loop system that reacts to real-time data, automatically identifies and eliminates hot spots and helps diagnose potential facility risks.

	 <p>EcoStruxure™ IT Advisor: Cooling Optimize - dynamic, intelligent cooling Schneider Electric</p> <p>https://www.youtube.com/watch?v=yFMS-88wXn8, at 1:03; https://download.schneider-electric.com/files?p_enDocType=Brochure&p_File_Name=998-21764381_EcoStruxure_IT_Advisor_Cooling_Optimize.pdf&p_Doc_Ref=SPD_RMCR-9K5JG4_EN.</p>
<p>[1b] sensing the temperature of said at least one associated rack;</p>	<p>Digital Realty senses the temperature of said at least one associated rack.</p>

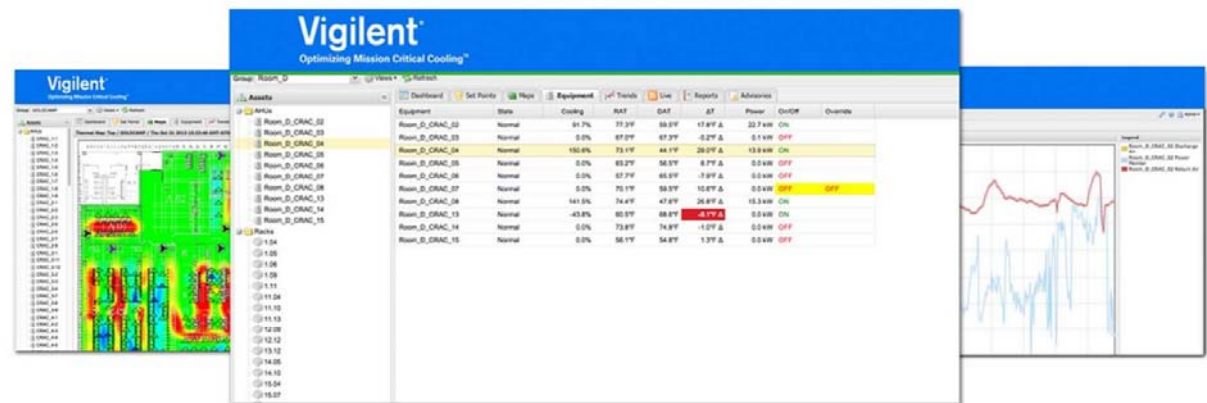
For example, Digital Realty uses Liebert cooling units and the Liebert cooling unit control system senses temperatures.

13.2 Installing Wired Remote Sensors

Up to 10 remote sensor modules, installed in the monitored racks and connected to the cooling unit, provide control and reference input to iCOM and building-management systems. Using remote, rack sensors combats cooling problems related to recirculation air, uneven rack loading, and air distribution.

https://www.vertiv.com/49b8b2/globalassets/shared/liebert-icom-user-manual_sl-31075.pdf, p. 180.

Digital Realty also uses Vigilent's Optimizing Mission Critical Cooling to sense temperatures.



EVERYDAY TOOLS

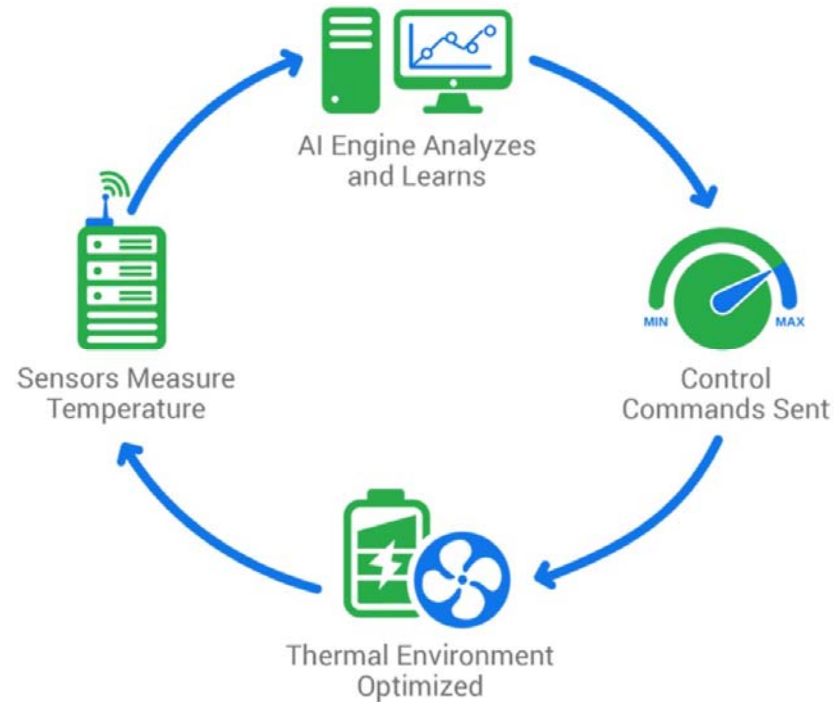
With our intuitive, at-a-glance system interface, checking the current status of your facility is always at your fingertips.

CHECK TEMPERATURES

With a few clicks, you can quickly dive down from a broad facility view into the real-time temperature data of one specific rack sensor.

EASY TRENDING

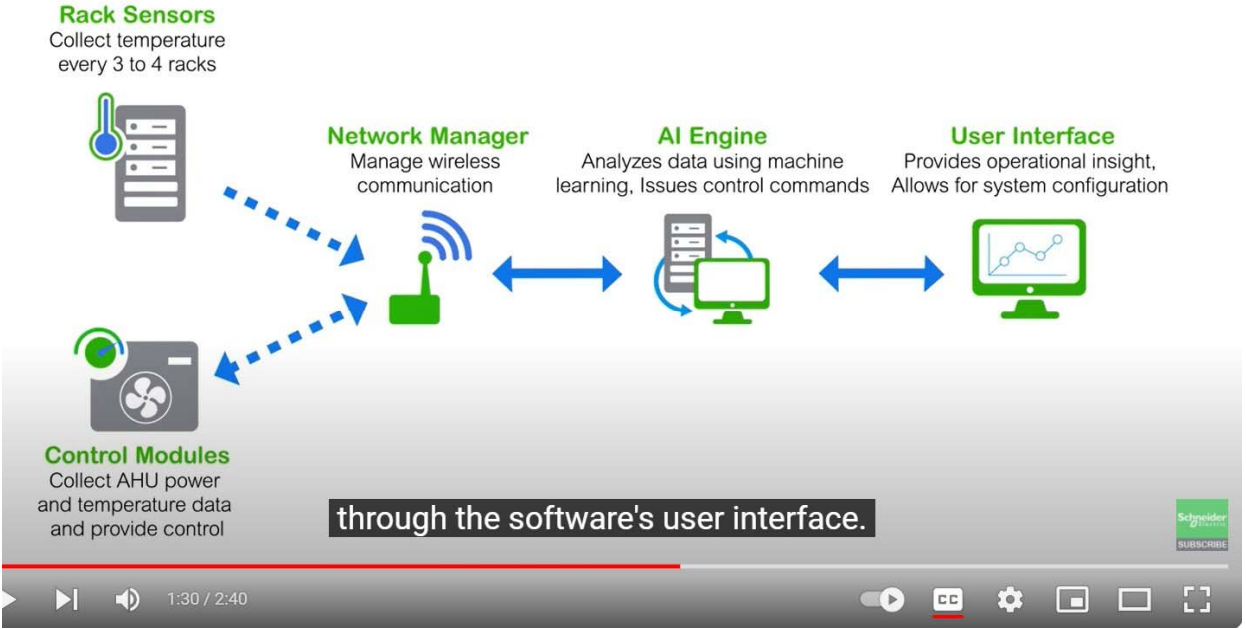
Customize data to quickly surface the information you need.



<https://www.vigilent.com/products-and-services/dynamic-control/>.

Digital Realty also uses Schneider's Cooling Optimize system which utilizes a dense array of temperature sensors to determine exactly where the heat load is within the data center. Data is wirelessly transmitted to network gateways, aggregated, and sent to a purpose-built appliance where it is analyzed by control software. Control commands are then delivered to the cooling equipment.

See https://download.schneider-electric.com/files?p_enDocType=Brochure&p_File_Name=998-21764381_EcoStruxure_IT_Advisor_Cooling_Optimize.pdf&p_Doc_Ref=SPD_RMCR-9K5JG4_EN.

	 <p>The diagram illustrates a digital realty system architecture. It features four main components: Rack Sensors (Collect temperature every 3 to 4 racks), Control Modules (Collect AHU power and temperature data and provide control), Network Manager (Manage wireless communication), AI Engine (Analyzes data using machine learning, Issues control commands), and User Interface (Provides operational insight, Allows for system configuration). The flow of data is as follows: Rack Sensors and Control Modules send data to the Network Manager via dashed blue arrows. The Network Manager communicates with the AI Engine via a solid blue double-headed arrow. The AI Engine then communicates with the User Interface via another solid blue double-headed arrow. A text box at the bottom of the diagram states "through the software's user interface." The diagram is part of a video player showing a timestamp of 1:30 / 2:40.</p> <p>https://www.youtube.com/watch?v=yFMS-88wXn8, at 1:30.</p>
<p>[1c] determining whether said sensed temperature is within a predetermined temperature range; and</p>	<p>Digital Realty determines whether said sensed temperature is within a predetermined temperature range.</p> <p>For example, Digital Realty uses the Liebert iCOM system which is able to identify if the temperature is at the setpoint value, and change the response to the varied flow field based on length of time temperature has deviated, and amount of deviation from setpoint.</p>

Temperature Integration Time

Adjusts amount of cooling/heating based on the length of time the temperature has deviated from the setpoint. The time selected is the amount of time it will take cooling capacity to reach 100%. For example, if three minutes is selected, cooling capacity will increase to 100% in three minutes.

NOTE: Three to five minutes of integration time is adequate for most applications. See [Considerations when Using PI Temperature Control](#) on page 28 .

NOTE: Only used when Temperature Control Type is PI.

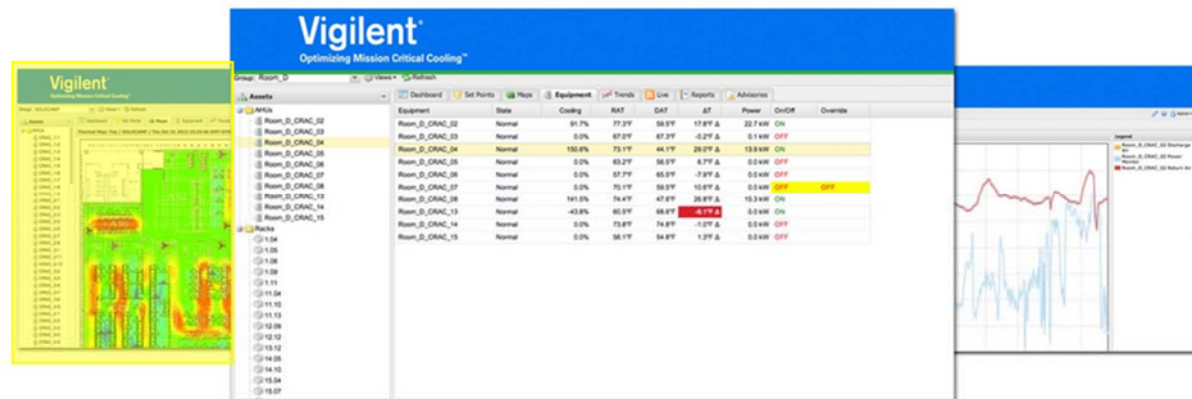
Temperature Proportional Band

Adjusts the activation point of cooling/heating components based on deviation from setpoint by placing half of the selected value on each side of the temperature control setpoint. A smaller number causes faster reaction to temperature changes.

NOTE: Setting this too low causes short cycling of compressors.

https://www.vertiv.com/49b8b2/globalassets/shared/liebert-icom-user-manual_sl-31075.pdf, p. 25.

Digital Realty also uses Vigilent's Optimizing Mission Critical Cooling to check the temperatures within its data centers to determine whether the sensed temperature is within a predefined temperature range.

**EVERYDAY TOOLS**

With our intuitive, at-a-glance system interface, checking the current status of your facility is always at your fingertips.

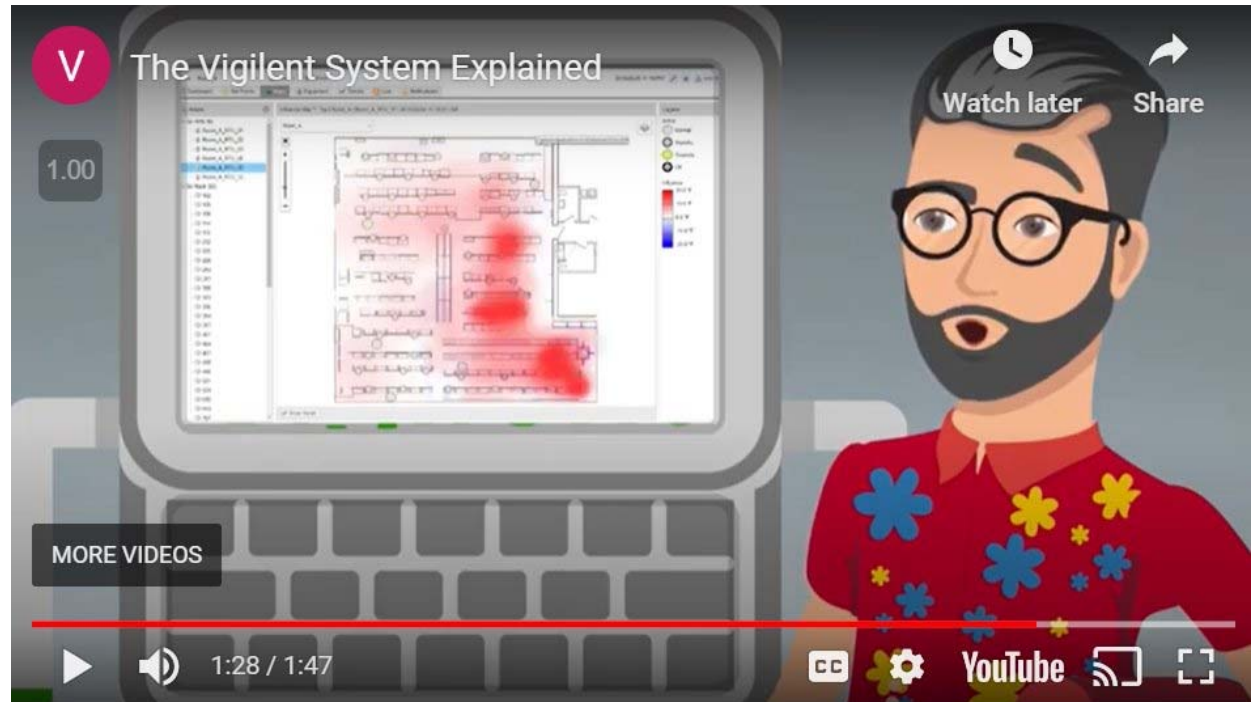
CHECK TEMPERATURES

With a few clicks, you can quickly dive down from a broad facility view into the real-time temperature data of one specific rack sensor.

EASY TRENDING

Customize data to quickly surface the information you need.

<https://www.vigilent.com/who-we-serve/by-facility/data-centers/>.

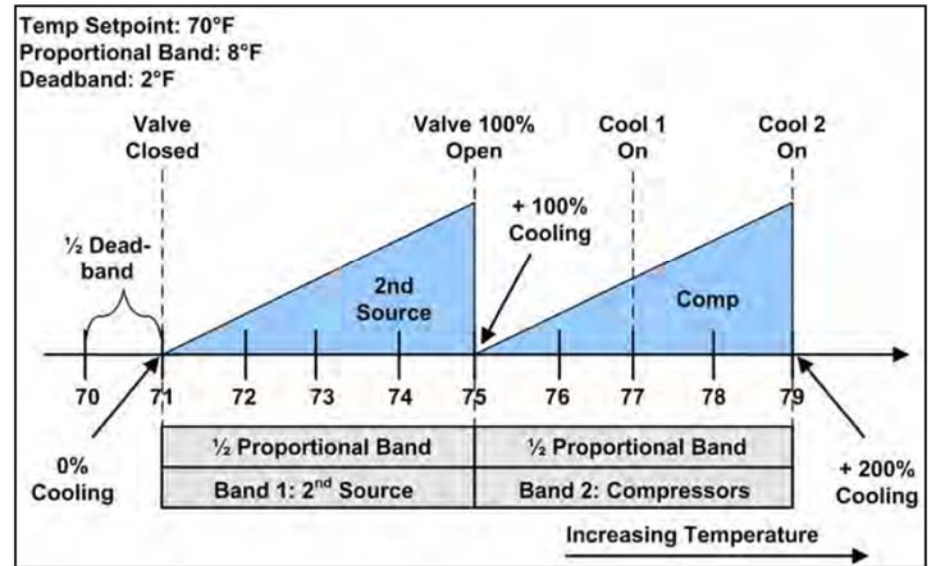


<https://www.vigilent.com/the-vigilent-system-explained/>, at 1:28.

Digital Realty also uses Schneider's Cooling Optimize system to determine whether the said sensed temperature is within a predetermined temperature range, for example, by using the temperature compliance report.

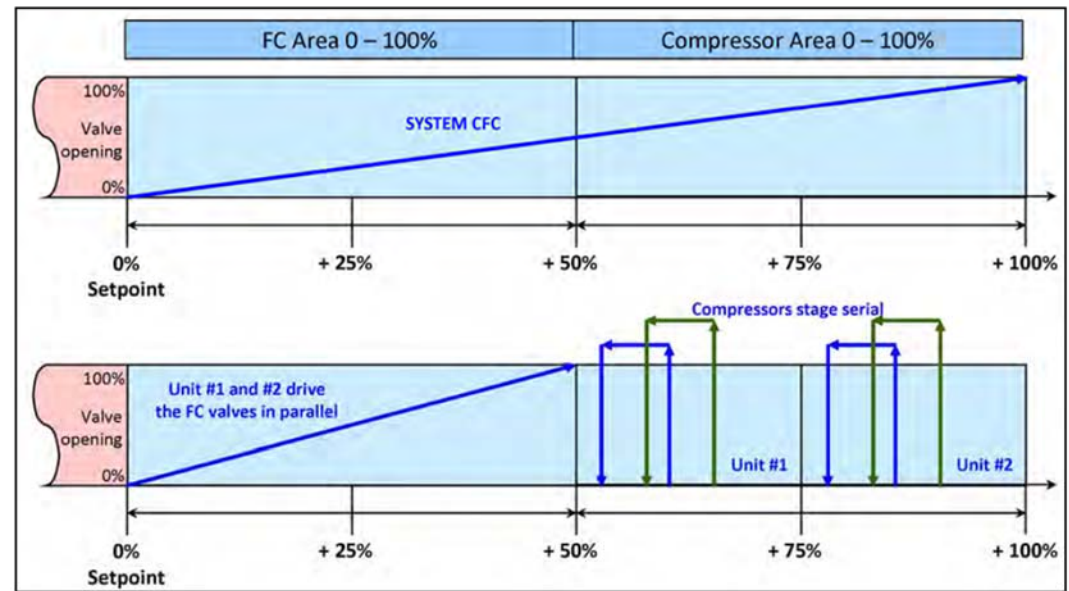
	<table border="1"> <tr> <td>Reports</td><td></td></tr> <tr> <td>Benchmark report</td><td>Verifies energy and cost savings, as well as greenhouse gas reductions, achieved through the use of dynamic cooling management.</td></tr> <tr> <td>Temperature compliance report</td><td>Identifies if rack temperatures have complied with required set points, and the time period that racks have been in violation of the set point limits, enabling easy detection of potential physical infrastructure irregularities.</td></tr> </table> <p>https://download.schneider-electric.com/files?p_enDocType=Brochure&p_File_Name=998-21764381_EcoStruxure_IT_Advisor_Cooling_Optimize.pdf&p_Doc_Ref=SPD_RMCR-9K5JG4_EN.</p>	Reports		Benchmark report	Verifies energy and cost savings, as well as greenhouse gas reductions, achieved through the use of dynamic cooling management.	Temperature compliance report	Identifies if rack temperatures have complied with required set points, and the time period that racks have been in violation of the set point limits, enabling easy detection of potential physical infrastructure irregularities.
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[1d] manipulating said controllable partition to vary said supply of said cooling fluid to said zone in response to said sensed temperature being outside said predetermined temperature range.	<p>Digital Realty manipulates said controllable partition to vary said supply of said cooling fluid to said zone in response to said sensed temperature being outside said predetermined temperature range.</p> <p>Digital Realty uses Liebert's iCOM system to manipulate the motorized ball valve (controllable partition) from 0% to 100% flow of chilled water/glycol.</p> <p>7.1.4 Temperature Control with a Fluid Economizer</p> <p>When an economizer is installed, the cooling requirement (determined by the temperature proportional band) is addressed first by the economizer's secondary cooling, if the economizer cooling capacity is insufficient, the compressor(s) begin cooling to bring the room air temperature down to the temperature setpoint.</p> <p>The fluid economizer employs a motorized ball valve that controls the flow of chilled water/glycol to provide a cooling capacity from 0% to 100%.</p> <p>https://www.vertiv.com/49b8b2/globalassets/shared/liebert-icom-user-manual_sl-31075.pdf, p. 110.</p>						

Figure 3.17 Second Cooling Source and Two-Step Compressorized Cooling



https://www.vertiv.com/49b8b2/globalassets/shared/liebert-icom-user-manual_sl-31075.pdf, p. 69, Fig. 3.17.

Figure 3.18 Freecooling and Compressorized Operation

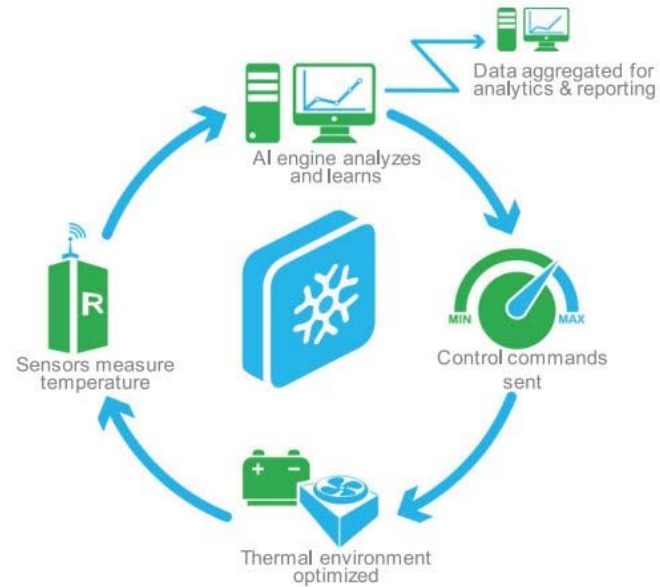


https://www.vertiv.com/49b8b2/globalassets/shared/liebert-icom-user-manual_sl-31075.pdf, p. 70, Fig. 3.18.

Digital Realty also uses Vigilent's cooling system to automatically eliminate hot spots in its data centers.

	<div><h2>AT A GLANCE</h2><p>Cooling becomes a managed resource that reacts to real-time data, which reduces the chances of downtime.</p><div><div>Automated hot spot reduction<p>The system can automatically removes 95% (or more) of hot spots and diagnoses how to treat the remaining problems through facility adjustments.</p></div><div>Instant results<p>From the moment the system goes live, the energy savings and carbon emissions reductions are immediate.</p></div><div>Cost savings<p>The system finds the perfect balance between delivering the right amount of cooling and the lowest possible energy expenditure.</p></div><div>Constantly adapting<p>The AI engine constantly changes cooling when it detects new equipment and varying IT loads.</p></div><div>Analytics<p>Our system turns mountains of current and historic data into focused, actionable information.</p></div><div>Risk mitigation<p>System failsafes help avoid costly outages.</p></div></div><p>https://www.vigilent.com/who-we-serve/by-facility/data-centers/.</p><p>Digital Realty also uses Schneider's Cooling Optimize to adjust cooling output.</p></div>
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As IT load changes, the built-in machine learning automatically adjusts cooling output to match the dynamic data center environment.



https://download.schneider-electric.com/files?p_enDocType=Brochure&p_File_Name=998-21764381_EcoStruxure_IT_Advisor_Cooling_Optimize.pdf&p_Doc_Ref=SPD_RMCR-9K5JG4_EN.